CLAIMS

What is claimed is:

1. An optical information storage medium comprising:

a lead-in area;

a lead-out area; and

a user data area formed between the lead-in and lead-out areas and in which user data is recorded,

wherein

pits are formed in tracks in the lead-in area, the user data area, and the lead-out area, and

a first track pitch between adjacent tracks in all or a portion of the lead-in area is different from a second track pitch between adjacent tracks in remaining areas of the optical information storage medium.

2. The optical information storage medium of claim 1, wherein the first track pitch is greater than the second track pitch.

3. The optical information storage medium of claim 2, wherein the lead-in area comprises a first subarea in which optical information storage medium-related information is recorded and a second subarea in which copy protection information is recorded, wherein a track pitch in at least one of the subareas is the first track pitch.

4. The optical information storage medium of claim 3, wherein a ratio of tracking error signals detected in the at least one of the first and second subareas having the first track pitch to tracking error signals detected in areas having the second track pitch is 1.5 or more.

5. The optical information storage medium of claim 4, wherein a ratio of differential phase tracking error signals detected in the at least one of the first and second subareas having the first track pitch to differential phase tracking error signals detected in the areas having the second track pitch is 1.5 or more.

6. The optical information storage medium of claim 1, wherein the lead-in area comprises a first subarea in which optical information storage medium-related information is recorded and a second subarea in which copy protection information is recorded, wherein a track pitch in at least one of the first and second subareas is the first track pitch which is greater than the second track pitch.

7. The optical information storage medium of claim 6, wherein a ratio of tracking error signals detected in the at least one of the first and second subareas having the first track pitch to tracking error signals detected in the areas having the second track pitch is 1.5 or more.

8. The optical information storage medium of claim 7, wherein a ratio of differential phase tracking error signals detected in the at least one of the first and second subareas having the first track pitch to differential phase tracking error signals detected in the areas having the second track pitch is 1.5 or more.

9. The optical information storage medium of claim 1, wherein the optical information storage medium has more than one recording surface.

10. An optical information storage medium for recording data in tracks, comprising:

a first area in which first data is recorded in corresponding first tracks, adjacent pairs of the first tracks having a first track pitch; and

a second area in which second data is recorded in corresponding second tracks, adjacent pairs of the second tracks having a second track pitch other than the first track pitch.

11. The optical information storage medium of claim 10, wherein the first area is within a lead-in area of the optical information storage medium.

12. The optical information storage medium of claim 11, wherein the lead-in area includes additional data recorded in additional tracks, adjacent pairs of the additional tracks having another track pitch other than the first track pitch.

13. The optical information storage medium of claim 12, wherein the another track pitch is the second track pitch.

14. The optical information storage medium of claim 11, wherein the first data comprises information used in reproduction of the second data.

15. The optical information storage medium of claim 10, wherein the first data comprises information used in reproduction of the second data.

16. The optical information storage medium of claim 10, wherein the second area includes a user data area of the optical information storage medium.

17. The optical information storage medium of claim 16, wherein the first data comprises information used in reproduction of the second data.

18. The optical information storage medium of claim 16, wherein the second area includes a lead-out area disposed outside of the user data area, the lead-out area including additional data other than the second data.

19. The optical information storage medium of claim 17, wherein:

the first area is in a portion of a lead-in area, and

the second area includes another portion of the lead-in area.

20. The optical information storage medium of claim 19, wherein the second area includes a lead-out area disposed outside of the user data area, the lead-out area including additional data other than the second data.

21. An apparatus to optically transfer data with respect to an optical information storage medium, the apparatus comprising:

an optical unit to transfer first data with respect to first tracks in a first area of the optical information storage medium, and to transfer second data with respect to second tracks in a second area of the optical information storage medium other than the first area; and

a controller to control the optical unit to transfer the first and second data with respect to the corresponding first and second areas,

wherein:

adjacent pairs of the first tracks have a first pitch, and

adjacent pairs of the second tracks have a second pitch other than the first pitch.

22. The apparatus of claim 21, wherein the first area is within a lead-in area of the optical information storage medium.

23. The apparatus of claim 22, wherein the lead-in area includes additional data recorded in additional tracks, adjacent pairs of the additional tracks having another track pitch other than the first track pitch.

24. The apparatus of claim 23, wherein the another track pitch is the second track pitch.

25. The apparatus of claim 21, wherein the first data comprises information used by the controller in reproduction of the second data.

26. The apparatus of claim 21, wherein:

the controller uses a differential signal to perform tracking when transferring the first and/or second data with respect to the optical information storage medium,

a first differential signal detected from the first data recorded in the first tracks is other than a second differential signal detected from the second data recorded in the second tracks.

27. The apparatus of claim 21, wherein the second area includes a user data area of the optical information storage medium, and the second data is user data which the controller reproduces and/or records in the user data area.

28. The apparatus of claim 27, wherein the first data comprises information used by the controller in reproduction of the second data.

29. The apparatus of claim 27, wherein the second area includes a lead-out area disposed outside of the user data area, the lead-out area including additional data other than the second data.

30. The apparatus of claim 28, wherein:

the first area is in a portion of a lead-in area, and

the second area includes another portion of the lead-in area.

31. The apparatus of claim 30, wherein the second area includes a lead-out area disposed outside of the user data area, the lead-out area including additional data other than the second data.